For Healthier Lives

Massachusetts Department of Public Health

Communicable Disease Update

Newsletter of the Bureau of Communicable Disease Control

Volume 5 Issue 1 Winter 1997

Meningitis

When people hear of a case of meningitis, anxiety and confusion often result. This is largely due to the seriousness of the illness and the fear of transmission to contacts. Meningitis, defined as an inflammation of the membranes surrounding the brain and spinal cord, is most commonly caused by certain viruses or bacteria.

Viral meningitis

Viral (aseptic) meningitis is more common and generally less severe than bacterial meningitis. The incubation period averages 3–6 days and common symptoms include fever, headache, irritability, and stiff neck. Cases are more prevalent in the summer and fall. Enteroviruses, which cause the majority of viral meningitis cases, are shed in feces and respiratory secretions and are transmitted from person to person. Handwashing and attention to good hygiene are excellent preventive measures for viral meningitis. No specific treatment exists for cases or close contacts.

Bacterial meningitis

Occurring predominantly in the winter and spring, bacterial meningitis is less common and generally more severe than viral meningitis. Symptoms of bacterial meningitis can include fever, headache, stiff neck, nausea, and a rash. The majority of bacterial meningitis is caused by three types of bacteria: 1) *Streptococcus pneumoniae*, which primarily affects children under 1 year of age and the elderly; 2) *Neisseria meningitidis*, which primarily affects children and young adults; and 3) *Haemophilus influenzae* type B (Hib), which primarily affects children between 2 months and 5 years of age. Hib disease has declined dramatically since the introduction of the childhood Hib vaccine in 1987.

N. meningitidis and Hib are found in the nose and throat of infected individuals and can be transmitted to close contacts via saliva and respiratory droplets. Close contacts include household members, day care contacts, and those who kiss or share utensils, foods, beverages, or cigarettes with someone who is infected. Health care workers who intubate, suction, or resuscitate infected patients would also be considered close contacts. Depending on the case-specific setting, other individuals may be identified as close contacts. To prevent secondary cases due to *N. meningitidis* and Hib, close contacts should be evaluated for possible prophylactic treatment.

If you see a patient with meningitis:

1. **Report the case to the local board of health.**
2. **Distribute information about the signs and symptoms of meningitis.**
3. **Advise that close contacts of meningitis cases caused by *N. meningitidis* or Hib be evaluated for prophylactic treatment.**

Health is beautiful

The beauticians serving the African-American community in Springfield are being recruited to assist in an STD prevention project. Beauty shops have long been known as safe places for confidential discussion of all sorts of issues. Recently, an article was published about the role beauticians play in educating women about breast cancer. With that in mind, Division staff in Springfield (P. Briggs and M. Early-Moss) proposed to enlist the assistance of beauticians to promote awareness of STDs and the availability of clinical services in the area. The need for such an educational campaign is underscored by the higher rates of STDs in Springfield compared with the rest of Massachusetts.

At the first meeting with beauticians in the area, those asked to help with the project responded enthusiastically. They offered suggestions about what sorts of materials should be developed for the campaign. A second meeting with a larger group is scheduled for early in 1997 to follow up on the work begun in the first meeting.

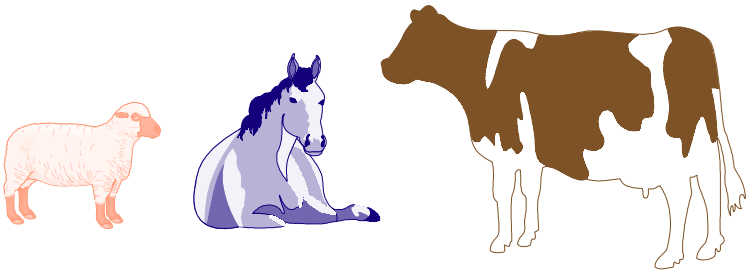
Inside

Epidemiology Update

Livestock rabies quarantine: 10 days or 14?

Regulations of the Massachusetts Department of Food and Agriculture's Bureau of Animal Health require a 14-day quarantine period for livestock that bite or otherwise expose humans to rabies, but **public health officials should be informed of the health status of the animal after 10 days** so they can make decisions about postexposure prophylaxis.

Exposure is defined as a bite or salivary contact with mucous membranes or open wounds, and notification after 10 days of quarantine is the general policy following such exposure. However, if the exposing animal is unhealthy, attacks in an unprovoked manner, inflicts a bite to the head or neck, has a history of being exposed to a rabid or potentially rabid animal, or has wounds of unknown origin, euthanasia of the animal or prophylaxis of the person may be appropriate. Therefore, each situation needs to be considered on a case-by-case basis.



Although cattle and other livestock are fairly susceptible to rabies (Massachusetts has documented 12 rabid cows in the past four years), one study of infected cattle found that most either didn't shed virus at all or shed virus in saliva for no more than three days before symptom onset.

In addition, no human cases of rabies in the United States have been acquired from livestock—even more than 50 years ago, when ten times as many cattle were rabid. If the virus were readily spread through livestock saliva, one would expect some farmers to have contracted rabies by sticking their arms down the animals' throats, which they often do to check for or clear foreign body obstructions.

For assistance in evaluating human exposures to livestock, contact the Division of Epidemiology and Immunization at (617) 983-6800. To request that a cow or other livestock be quarantined or for information about quarantined livestock, contact the Bureau of Animal Health at (617) 727-3018, x158.

Shoe-leather epidemiology gets a lift from the Lab

Person, place and time of infection are easily determined by old-fashioned shoe-leather epidemiology, but science now provides the epidemiologist with more powerful tools to link cases of disease. The Massachusetts Department of Public Health State Laboratory Institute (SLI) is a regional reference lab for one of these, pulsed-field gel electrophoresis (PFGE), and assists in epidemiologic investigations of disease throughout New England.

PFGE is a laboratory technique used to determine the genetic relatedness of strains of bacteria. DNA pieces from bacterial isolates are incorporated into an agarose gel and subjected to a pulsed electric field that moves them through the gel at varying speeds according to size. The resulting patterns provide genetic "fingerprints" of the organisms. The band patterns of different isolates are compared and their relatedness is determined based on the pattern similarities.

PFGE was recently used to verify the existence of an outbreak of *E. coli* O157:H7 linked to mesclun salad greens in Connecticut. Isolates from Connecticut cases of *E. coli* O157:H7 were compared with isolates from Massachusetts cases. The investigation verified that Connecticut cases were caused by a single strain of *E. coli* O157:H7 and identified two Massachusetts cases that were laboratory and epidemiologically linked to the Connecticut outbreak. PFGE is also being used to compare Massachusetts isolates of *Neisseria meningitidis* with isolates from cases in neighboring states. This laboratory technique has proven to be invaluable in identifying links between cases of disease, thereby aiding in the control and prevention of disease.

Personnel

The Massachusetts Immunization Program welcomes three new immunization epidemiologists and a morbidity coordinator to our staff. James Ida, MPH; Flora Sadri, MPH; and Brian Riley, MA, MPH will be conducting outbreak control for vaccine-preventable diseases throughout the Commonwealth. Katherine Yih, PhD, MPH, is the new statewide morbidity coordinator for vaccine-preventable diseases. Their offices are located at the State Laboratory Institute in Jamaica Plain.

STD Update

The new generation of chlamydia tests

The STD Laboratory at the State Laboratory Institute now uses a ligase chain reaction (LCR) test system for chlamydia. The LCR uses DNA amplification, a new generation of test technology. It is more sensitive than the previous system, which required confirmatory testing and could detect chlamydia only if several thousand organisms were present. LCR can detect chlamydia if there are as few as 1–10 organisms present.

As a result of this increased sensitivity, the number of positive tests among women in STD clinics has nearly tripled. Data for the first quarter of testing are shown below.

Date	Test	No. Tested	No. (%) Positive
July–Sept. '95	EIA/Block	783	24 (3.1%)
July–Sept. '96	LCR	739	64 (9.2%)

As the use of DNA amplification technology increases, we may see a reversal of the six-year downward trend in reported chlamydia cases. Such an increase might be an artifact of more sensitive testing. However, this apparent increase could be followed by a true decline, as previously unrecognized cases and their partners are treated.

Save the dates!

CDC Satellite Training Course: Update on Adult Immunization
April 24, 1997; times and locations to be announced
Mark the date on your new calendar now!

Massachusetts Public Health Association Women's Breakfast Series at Tufts New England Medical Center; for more information call Christie Burke at (617) 983-6959.

Topics:

Eve Is More than Adam's Rib:
The Women's Health Initiative—Feb. 12

Am I Blue?
Myths and Realities of Depression—March 13

"The Doctor Will See You Now"
Improving the Dialogue—April 9

Have We Come a Long Way?
Women and the Media—May 14

Nurses train for SANE

Sexual Assault Nurse Examiner training program

When the Department of Public Health's SANE program achieves full operation, it will train 250 registered nurses to care for the estimated 1,700 residents who seek treatment in hospital emergency rooms each year after a sexual assault. These nurses will be available on-call to participating emergency departments to provide sensitive and timely care for victims of sexual assault.

Training has already begun. In November, Dr. Ratelle of the HIV/STD Prevention Training Center of New England spoke to a group of registered nurses on techniques of examination for sexually transmitted diseases in victims of sexual assault. Limited program operation will begin in Boston and Lawrence this spring.

Nurses interested in becoming SANE-certified by the Department of Public Health should have at least five years of nursing experience, preferably with emergency department, psychiatric or ob/gyn experience. Nurses with experience in the care of victims of sexual assault will be considered as well. The certification requirements include a 40-hour education program, a written exam, and completing a pelvic exam and a preceptorship. Nurses who want more information should contact Lori Sherman at (617) 624-6085 or Donna Doyle at 624-6076.

STD education

Family Planning for Advanced Practice I and II
February 21 & 22; cosponsored with ABCD. Two full days covering family planning and sexually transmitted diseases. Nursing CEUs available. For more information call Shelly Mains, Training Coordinator at ABCD, (617) 357-6000, x235.

HIV/STD Prevention Training Center 1997 Calendar
Complete schedule available; call Wendy Hylton at (617) 983-6945. **Partial listing:**

Three-Day STD Intensive
Jan. 27–29; Feb. 24–26; March 24–26; June 2–4; Sept. 29–Oct.1; Oct. 27–29

Advanced STD Intensive (5 days)
Spring: Lectures April 2–3; Clinical April 28–30
Fall: 5 consecutive days, December 1–5

Bright-field Microscopy (half or full day)
Wet Mounts: Feb. 26; April 30; June 4; Oct. 29; Dec. 4
Stained Smears: April 30; Oct. 29

Syphilis Serology (1 day): May 14

Dark-field Microscopy (half-day): November 6

Regional Update: TB

Western and Central—TSA 1 (413) 736-8939 **Secretary:** Evelyn Thomas **Nurse:** Carol Cahill, R.N.

TSA 1 consists of 5 counties: Berkshire, Franklin, Hampden, Hampshire and Worcester. The Public Health Nursing Advisor is Carol A. Cahill, R.N. Secretarial duties are performed by Evelyn Thomas. We have one part-time case register surveyor, Kathleen Lupien. Community outreach is provided by Evelyn Rodriguez (Western MA) and Wallezka Rivera (Central MA). Beginning January 1, 1997, staff will be located at the DPH regional office in Northampton.

Clinical services

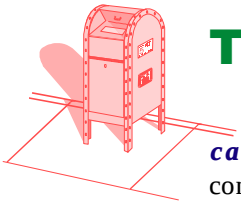
Free clinical services are provided at the Baystate Medical Center, Springfield; Berkshire Medical Center, Pittsfield; Burbank Hospital, Fitchburg; Franklin Medical Center, Greenfield; Harrington Memorial Hospital, Southbridge; Holyoke Hospital, Holyoke; and Family Health & Social Services, Worcester (in the former Worcester City Hospital).

Epidemiology

In 1995, 64 cases of *M. tuberculosis* were verified. Cities in TSA 1 with case rates higher than the state's case rate include Springfield and Worcester.

Education activities

Recently, a half-day program entitled, "Region TB Update, 1996" was held at Holyoke Hospital. This program provided health care professionals from the area boards of health, clinics and other health care agencies with insight into the newest guidelines and general information related to the TB Prevention and Control program.



Tell us your ideas!

The reader survey we recently ran in ***Communicable Disease Update*** indicated that most readers consider "**You be the epi**" very informative or useful. Now we're inviting you to send in the epidemiology questions you'd like to see answered in the column. What communicable disease questions, concerns or situations that you face in your office would you like to have epidemiologically analyzed? We will gladly base future columns on the issues you send in. Send your ideas to: Allison Hackbarth, MPH, c/o *Communicable Disease Update*, State Laboratory Institute, 305 South Street, Boston, MA 02130.

DTaP for your patients

Tripedia, the first diphtheria, tetanus, acellular pertussis vaccine licensed for use in infants and children 2 months through 6 years old, is available through the Massachusetts Immunization Program (MIP). To get it for your patients you must use the most recent (pink) version of the vaccine order form, which is available from your vaccine distributor or regional immunization office.

Several studies have shown that DTaP vaccine is associated with fewer local reactions, fever and other common systemic symptoms than whole-cell DTP vaccine. Two clinical trials showed protective efficacy rates of 69–80%. The Advisory Committee on Immunization Practices (ACIP) recommends DTaP for routine use as the first four doses of the five-dose pertussis vaccine series.

Until revised vaccine usage forms are available, please record usage of both DTP and DTaP vaccines under the column for DTP on your reports (green "bubble" sheets).

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Regional Update: Immunization

Western (413) 545-6600 **Epidemiologist:** Marija Popstefanija, MD, MPH **Nurse:** Judith Coates, RN
Admin. Assistant: Marilyn Brown

Morbidity

The number of pertussis cases in the western region increased substantially during the fall. Two outbreaks occurred: one at a large hospital in Hampden County and the other at Amherst Junior High School. The hospital outbreak in Hampden County involved seven reported cases of pertussis from June 28 through August 23. Five of the seven were employees directly linked to the neonatal intensive care unit, one confirmed case occurred in the pharmacy, and one in a food service employee. In response, 226 people were prophylaxed.

The second outbreak at the junior high in Amherst involved 11 confirmed cases, nine of which were in the ninth grade, one a sibling in the eleventh grade and one in an elementary school. Three sports teams as well as 210 contacts were prophylaxed.

During the third quarter of 1996, there were 39 confirmed pertussis cases in the western region compared with 20 in the first quarter and 22 in the second. The number of cases in the last quarter of the year is expected to be even higher.

Vaccines

Distribution of DTaP vaccine (Tripedia) began in October. The IIS (Important Information Statement) for this new vaccine is also available. Please call our office at the number above if you have not received information on DTaP.

Approximately 70,000 doses of influenza vaccine were distributed to boards of health, nursing homes, and other providers during the fall of 1996. Please remember to submit your flu and pneumococcal vaccine usage forms by February 1, 1997.

An ample supply of pneumococcal vaccine is still available, and can be given year-round. Please call our office to order a supply.

Winter reminder: When transporting vaccines, do not leave them in your car for long periods of time. It might seem safe in the winter, but vaccines meant to be refrigerated could freeze in the trunk of your car. When this happens, vaccines are then destroyed and can **NOT** be administered.

Teens now eligible

The Children's Medical Security Plan is now available for teenagers (through 18 years old) as well as younger children. This subsidized health insurance program provides free or low-cost coverage (depending on family income) for children from newborns through age 18.

Call (800) 909-2677 for more information.

You be the epi!

A resident of your town contacts you at your board of health office to report that his Labrador retriever has just returned home after what looks like a vicious fight with an unknown animal. The dog suffered many bite wounds on its face and neck, and the neck appeared to be wet, the man said. He picked some gray fur out of the wounds and then washed the wounds thoroughly by hand. He wants to know whether the dog should be brought to a veterinarian for its rabies shots.

You call his veterinarian, who reports that the animal has never been vaccinated against rabies. You must decide how to handle the dog and whether the man should be treated. What should you do?

Analysis:

It is likely that the dog was in a fight with a wild animal, possibly a raccoon. Because raccoon-transmitted rabies is now in all parts of the state, the pet could have been exposed to the rabies virus and possibly exposed the owner. The man should be referred to his health care provider, who will assess the integrity of the skin on the man's hands and determine whether he could have been exposed. If he is at risk, the provider will treat with rabies immunoglobulin (RIG), the human diploid cell vaccine (HDCV) or the rabies vaccine adsorbed (RVA) and possibly a tetanus shot.

Since the dog was not vaccinated and could have been exposed to a rabid animal, it should be euthanized. If the owner refuses this, he should be advised of the risk that his dog will develop rabies. Notify the local animal control official as the dog should be strictly confined for six months, with regular observations throughout. The pet may be confined off the owner's property or the dog may be kept at home in the house, garage or some other escape-proof building or enclosure approved by the local animal control official. The animal should be vaccinated one month before release.

Immunization Update

Order now!

It may seem early to start thinking about National Infant Immunization Week, but the third week in April is not that far off. This is our annual opportunity to emphasize the importance of protecting babies' health by vaccinating them on time. To make sure you're prepared to get the word out, look over the list of materials below and get your order in early.

The following items are available through the Massachusetts Immunization Program. Call your regional office or Caryl Haddock at (617) 983-6811.

Payroll & bill stuffers

- 10 Good Reasons to Vaccinate on Time (English & Spanish)

Videos

- Before It's Too Late, Vaccinate (16 min., English & Spanish)

Posters

- Immunize Your Children (Spanish; limited number of English available)
- 9 Good Reasons to Immunize (English only)

Fact Sheets (English only)

- Chickenpox
- Hepatitis B
- Hib Vaccine
- Measles
- Mumps
- Pertussis
- Polio
- Rubella

Booklets & Pamphlets

- Parents' Guide to Immunizations (English or Spanish)
- Hepatitis B Information for Parents (English, Spanish or Portuguese)
- Measles Is Dangerous (Spanish or Portuguese)
- Hepatitis B Information for Pregnant Women (English or Spanish)
- Vaccination schedule (English)
- Vaccinations: The Greatest Gift You Can Give Your Grandchild…and Yourself (English only)

The following items are available through your area Prevention Center (see p. 5 of October 1996 *CD Update* for phone numbers):

- Parent booklets, "Give Your Child a Shot at Good Health" (English, Spanish, Portuguese, Chinese, Khmer [Cambodian], Vietnamese, Haitian Creole, or Russian)
- Coloring books, "My Book about Shots" (English, Spanish, Portuguese)

Tracking flu in Massachusetts and around the world

In an effort to assess and respond to influenza activity in Massachusetts, the MIP (Massachusetts Immunization Program) has established a network of 34 sentinel health care sites: community health centers, teaching hospitals, and private physicians' practices distributed across the state. Throughout the flu season, these sentinel sites submit specimens to the State Laboratory Institute every week for viral isolation and testing. Flu surveillance is based on specimens submitted by sites in the network as well as on specimens and reports sent to the MIP by individual health care providers.

The sentinel sites in Massachusetts contribute to a world-wide effort to track specific patterns of influenza activity and virus circulation. This information is important in planning and evaluating influenza control activities and identifying the strains to be included in next years influenza vaccine.

Handle with care

As noted in previous articles, varicella vaccine is extremely temperature-sensitive and therefore requires careful handling and storage. This vaccine must be stored in a freezer that: 1) can maintain an average temperature of **-15°C (+5°F) or colder**; 2) has a **separate insulated door** (*dorm-style cube refrigerators and water cooler refrigerators are not adequate*); and 3) is **frost-free**. Providers should be maintaining a daily log of freezer temperatures to ensure that their freezer is cold enough to store vaccines at their recommended temperatures.

The manufacturer's package insert states that varicella vaccine may be stored at refrigerator temperature (2–8ºC, 36–46ºF) for up to 72 continuous hours *before being reconstituted*. (Once reconstituted, it must be discarded if not used within 30 minutes.) Varicella vaccine that has been moved to the refrigerator **cannot be refrozen;** if not used within 72 hours it must be discarded.

The Massachusetts Immunization Program **does NOT recommend** this practice. However, if you do move varicella vaccine from the freezer to the refrigerator, carefully label it with the date and time you moved it. Check the label carefully before reconstituting the vaccine to make sure that you don't inadvertently give a dose of non-potent vaccine.

Protease Inhibitor Interactions with Rifamycins

CDC Interim Recommendations

The new protease inhibitor class of drugs: saquinavir (Invirase), ritonavir (Norvir), and indinavir (Crixivan) represent an advance in the treatment of HIV infection. These potent inhibitors of viral replication, combined with older anti-HIV drugs, provide longer-term suppression of the virus. Treatment is associated with elevated T-lymphocyte counts and improved immune function.

These drugs are not perfect, however. Treatment requires scrupulous compliance with the correct dose or viral resistance may develop. In fact, stopping therapy is preferable to lowering dose below recommended level or missing more than a few doses. These medications also have varied and significant side effects, although it must be noted that the majority of patients do not have side effects. Additionally, these drugs tend to have potent and significant interactions with other medications.

The Centers for Disease Control and Prevention (CDC) recently issued a clinical alert on the interaction of the rifamycin derivative tuberculosis drugs (rifampin, rifabutin) with the new protease inhibitor drugs (MMWR 1996; 45:921-5). In general, the rifamycins increase metabolism of protease inhibitors through induction of the hepatic P450 cytochrome oxidases resulting in subtherapeutic levels (and the danger of viral resistance), while the protease inhibitors slow the metabolism of the rifamycins resulting in increased drug levels (and potential toxicity). The clinical dilemma is that optimal treatment is essential for patients with tuberculosis and HIV infection.

The CDC suggests individualization of therapy, and offers several management options. However, these are interim recommendations due to limited available clinical information.

For TB patients not yet on protease inhibitors:

The CDC suggests completing TB treatment with the standard 4-drug, rifampin-containing regimen before beginning a protease inhibitor.

When protease inhibitors have already been started:

Option 1: Discontinue the protease inhibitor until 4-drug TB treatment is complete. The rationale is that the risks of discontinuing protease inhibitors are unclear at this time (but appear to be lower than the risk of subtherapeutic levels), while the risks of using drug regimens without rifampin for rifampin-susceptible TB are well known: treatment failure, drug resistance, progression of HIV infection, and possible TB transmission to others. A major concern with this option is that interruptions in protease inhibitor therapy can result in ground lost to immune compromise.

Option 2: Minimize interruption of protease inhibitor therapy by treating with rifampin only until there is a bacteriologic response, usually within 3 months, and then switch to INH and ethambutol for 16 months, while reintroducing the protease inhibitor. This option may compromise efficacy of both therapies.

Option 3: Continue protease inhibitor therapy with indinavir together with a 9-month, 4-drug TB regimen containing rifabutin instead of rifampin. The rationale here is that indinavir and rifabutin have the least interaction among the combinations of drugs currently available. Indinavir approximately doubles the levels of rifabutin, while rifabutin reduces the levels of indinavir by about a third. However, when the dose of rifabutin is reduced to 150 mg per day in patients on indinavir, therapeutic levels of both drugs have been achieved. Currently, this is the option most likely to preserve the intended personal health benefits of both therapies, while addressing the important public health benefits of optimal TB control.

While therapy should be individualized to clinical circumstances, the MDPH Division of Tuberculosis Prevention and Control suggests that until further information becomes available, consideration be given to the rifabutin/indinavir option presented in the CDC recommendations. Phone consultation is available through the TB Division (Dr. Nardell, 617-983-6970), or through the CDC (404-639-8123).

New Massachusetts TB Reporting Number

Beginning February 1, 1997, the TB information reporting number for Massachusetts cases will change to:

1-888-MASSMTB
1-888-627-7682

Yes, it's flu season

Our first case of influenza in the Bay State occurred in early November, approximately one month earlier than last year. However, this early start does not necessarily mean that the flu will be more common or even more serious this year compared to last year. The case, a three-month old baby boy, had fairly typical flu symptoms including sudden onset of high fever on November 9, cough, vomiting, and mild diarrhea. The viral strain has been identified as influenza A, subtype H3N2 (Wuhan-like). This strain and all others identified to date nationwide appear to be covered by this year's formulation of flu vaccine.

Nationwide, levels of flu activity were typical during September and October. In most cases the activity was considered sporadic. By mid-December, influenza activity had been reported in numerous states.

To help reduce the spread of influenza within the Commonwealth, the Massachusetts Immunization Program (MIP) distributed over 590,000 doses of flu vaccine this fall. The MIP recommends vaccination for everyone 65 years of age and older; anyone with heart, lung or other chronic diseases; residents in long-term care facilities; and others for whom influenza and its complications may be serious. Vaccination is also recommended for the household members and health care providers of people at risk for complications of influenza infection.

Shots can be given at any time during the flu season, which can last into March. The MIP is urging people to be vaccinated as soon as possible as it takes a few weeks for immunity to develop. Remember: ***It's never too late to vaccinate!***

Ten-year anniversary

Working Group on Foodborne Illness Control

Representatives from the Divisions of Epidemiology and Immunization, Food and Drugs, and Diagnostic Laboratories participate in the Working Group on Foodborne Illness Control (WGFIC). The group was formed in 1986 in an effort to streamline foodborne disease investigations that often involve the three divisions. The main functions of the WGFIC are to:

- respond to consumer complaints regarding potential foodborne illness,
- assist and train local boards of health in investigations of foodborne illness outbreaks,
- identify causes of outbreaks through facility inspection, laboratory testing, and epidemiologic analysis, and
- make recommendations for the prevention and control of foodborne illness.

Through the years, the group has played an integral part in developing several policies regarding foodborne illness trends. For example, in the late 1980s an increase in egg-associated cases of salmonellosis in the Northeast led the group to develop a policy restricting the use of shell eggs in long-term care facilities. The WGFIC is preparing a reference manual on foodborne illness investigation and control for local boards of health and is initiating a shared computerized foodborne illness database.